

PRODUCT SPECIFICATION

COMPRESSOR MODEL

CR36K6M-PFZ-XXXXX

COMPRESSOR MODEL

101, 121, 121DM

Emerson Climate Technologies (India) Private Limited
Karad Dhebewadi Road
Karad - 415 110
INDIA

Note: Sales compressor drawing number and compressor model name are the same.

DVM				01	F45-1018-0211 EN No.	A2 24.10.2018
Prepared by	Checked by	Verified by	Approved by	Page No.	CR36K6M-PFZ-XXXXX DOCUMENT No.	

PRODUCT SPECIFICATION**MODEL: CR36K6M-PFZ-XXXXX****A) MODEL DESCRIPTION**

Model Name	CR36K6M-PFZ-XXXXX
Compressor Type	Reciprocating, Connecting Rod Type
Application Group	High Temperature (HBP)
Evaporating Temperature Range	(-)23.3 °C To 12.8 °C Or (-)10 °F To 55 °F
Refrigerant	R-22
Rated Voltage	220-240 V, 50 Hz, 1 Phase
Compressor Cooling	Fan: 400 ft ³ / minute
Typical Application	Air - Conditioning, Heat Pump
*Certifications & Approvals	UL (File No.SA12060)

B) PERFORMANCE SPECIFICATION @ RATED CONDITION

Parameter	Unit	ASRE/T	ARI
Cooling Capacity	Btu / hr	30,100	29,300
	kcal / hr	7,585	7,383
	W	8,814	8,579
	Nominal HP	---	3.0
Input Power	W	2,720	2,720
Input Current	A	13.6	13.6
EER = $\frac{\text{Cooling Capacity}}{\text{Input Power}}$	Btu / W-h	11.07	10.77
	kcal / W-h	2.79	2.71
	W / W	3.24	315

Note: Above Performance Parameters are Nominal Values & subject to $\pm 5\%$ variation.

C) RATING CONDITIONS

Parameter	Unit	ASRE/T	ARI
Evaporating Temperature	°C (°F)	7.2 \pm 0.5 (45)	7.2 \pm 0.5 (45)
Condensing Temperature	°C (°F)	54.4 \pm 1 (130)	54.4 \pm 1 (130)
Ambient Temperature	°C (°F)	35 \pm 1 (95)	35 \pm 1 (95)
Sub-cooled Liquid Temperature	°C (°F)	46 \pm 1 (115)	46 \pm 1 (115)
Return Gas Temperature	°C (°F)	35 \pm 1 (95)	18.3 \pm 1 (65)
Test Voltage	V	220	220

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D) MECHANICAL SPECIFICATIONS

Parameter	Unit	Value
Number of Cylinders	Number	Two (2)
Displacement	cm ³ (inch ³) / rev	59.66 (3.640)
Net Weight	kg	34.9
Approximate Shipping Weight	kg	36.0
Oil Charge	cm ³ (Oz)	1,330 (45)
Oil Type	Refrigeration Grade	Mineral
IPRV (Pressure Differential)	kg/cm ² (psig)	31.65 / 38.68 (450 / 550)
** Crank - Case Heater	W @ V	---

** Recommended only for Heat Pump Application.

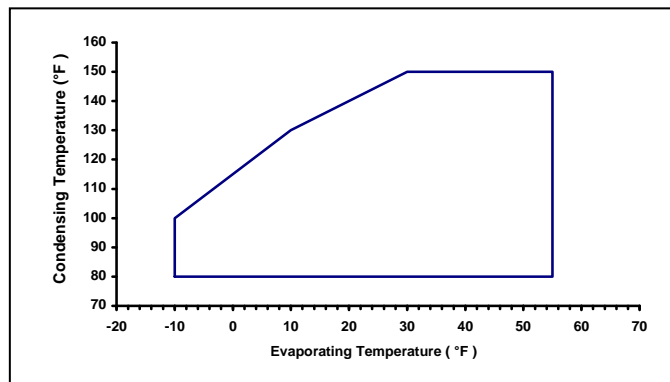
E) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Operating Voltage Range	V	198 To 264
Motor Circuit	---	CSCR
Electrical Accessories	---	
➤ Start Capacitor	μF @ V AC	130-156 @ 250, 43-52 @ 330
➤ Run Capacitor	μF @ V AC	40 @ 370, 45 @ 370
➤ Relay	---	Potential
➤ Over Load Protector	---	Internal
Locked Rotor Ampere (LRA)	A	85
Maximum Continuous Current (MCC)	A	21.3
High Potential Test	(kV / second / mA)	1.85 / 1 / 5.5 ± 0.5

* Recommended for Equal Pressure (169 psig) Condition & Minimum Terminal Voltage Of 180 V.

** Recommended for Hard Start & Unequal Pressure Condition.

F) OPERATING ENVELOP @ 230 V, 50 Hz, 3 Phase



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G) PERFORMANCE TABLES

Superheating	11 °C (20 °F)	Voltage	220 V, 50 Hz, 1 Phase
Sub - cooling	8.3 °C (15 °F)	Compressor Cooling	400 ft ³ / minute
Ambient Temperature	35 °C (95 °F)	-	-

H) COOLING CAPACITY (Btu / h)

Condensing Temperature		Evaporating Temperature									Coefficients			
											c1	c2		
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10	12.8	c3	-123.948283153959		
	(°F)	-10	0	10	20	30	40	45	50	55	c4	165.497286302102		
37.8	100	6220	10400	15100	20500	26700	33700	37600	41700	46200	c5	645.556752153787		
43.3	110	-	8200	13100	18400	24400	31200	34900	38900	43300	c6	7.135531331582		
48.9	120	-	-	11600	16600	22200	28600	32100	35800	39700	c7	4.751836727020		
54.4	130	-	-	9100	14200	19700	25900	29300	32900	36900	c8	-7.790103450130		
60.0	140	-	-	-	12700	17800	23500	26600	29900	33400	c9	0.024521518403		
											c10	-0.048105668351		
												c9	-0.019152943538	
													c10	0.023878929358

J) INPUT POWER (W)

Condensing Temperature		Evaporating Temperature									Coefficients			
											c1	c2		
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c3	2054.143100784430		
	(°F)	-10	0	10	20	30	40	45	50	55	c4	8.543005267585		
37.8	100	1220	1490	1710	1900	2030	2100	2120	2120	2110	c5	-26.062067741935		
43.3	110	-	1500	1740	1980	2160	2280	2320	2350	2360	c6	-0.317817213534		
48.9	120	-	-	1770	2060	2290	2470	2540	2590	2620	c7	0.336217785086		
54.4	130	-	-	1810	2090	2380	2620	2720	2800	2860	c8	-0.001316557215		
60.0	140	-	-	-	2120	2480	2770	2900	3010	3100	c9	0.001541690251		
												c9	0.001944811182	
													c10	-0.001326101624

K) INPUT CURRENT (A)

Condensing Temperature		Evaporating Temperature									Coefficients			
											c1	c2		
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c3	-6.384764263454		
	(°F)	-10	0	10	20	30	40	45	50	55	c4	-0.021101465513		
37.8	100	7.9	8.8	9.5	10.2	10.8	11.1	11.2	11.2	11.1	c5	0.356444269124		
43.3	110	--	8.7	9.7	10.6	11.3	11.9	12.1	12.2	12.2	c6	-0.000670198944		
48.9	120	--	--	9.7	10.8	11.8	12.6	12.9	13.1	13.2	c7	0.000362118870		
54.4	130	--	--	9.7	11.0	12.2	13.2	13.6	14.0	14.3	c8	-0.002650674713		
60.0	140	--	--	--	11.1	12.6	13.8	14.4	14.9	15.3	c9	-0.000010393161		
												c8	0.000005457737	
													c9	0.000006618450
													c10	0.000005983322

L) MASS FLOW RATE (lbs/hr)

Condensing Temperature		Evaporating Temperature									Coefficients	
											c1	c2
°C		-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8	c3	Under Evolution
	(°F)	-10	0	10	20	30	40	45	50	55	c4	
37.8	100										c5	
43.3	110										c6	
48.9	120										c7	
54.4	130										c8	
60.0	140										c9	
65.6	150										c10	

Note: 1. Nominal Performance Values (± 5%) based on 24 h of 'run in'. Subject to change without notice.

2. Compressor is intended to be operated in the range of condensing & evaporating temperatures where performance values are specified in above tables.

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PRODUCT SPECIFICATION**MODEL: CR36K6M-PFZ-XXXXX****M) MECHANICAL SPECIFICATIONS**

Parameter	Unit	Value
Cylinder Bore Diameter	cm (inch)	4.21 (1.656)
Crank - Shaft Eccentricity	cm (inch)	1.07 (0.423)
Crank - Shaft Stroke	cm (inch)	2.15 (0.846)
Approximate Internal Free Volume (Without Oil)	cm ³ (inch ³)	8,030 (490)
Maximum Residual Moisture	mg	300
Maximum Internal Solid Residue / Impurities	mg	40

N) ELECTRICAL SPECIFICATIONS

Parameter	Unit	Value
Motor Type	---	2 Pole, Induction, Single Phase
Nominal Motor Speed	rpm	2,900
Nominal Motor Winding Resistance (@ 25 °C)	Main	Ω 0.75 To 0.90
	Aux.	Ω 3.00 To 3.50
Nominal Motor Output Power	kW	2.88
Max. Allowable Motor Winding Temp.	°F (°C)	266 (130) B Class Insulation
Relay		
Type	---	Potential
Part Number	---	3ARR3CT3P5 Or RVA-3F6D Or HLR3800-3F3C-4
Pick Up (Maximum)	V	165 To 185
Drop Out (Minimum)	V	65 To 95
Maximum Voltage Rating of Coils	V	330
Over Load Protector		
Type	---	Internal
Part Number		15HM-1899-78
Disc Opening Temperature	°F (°C)	221 To 239 (105 To 115)
Disc Closing Temperature	°F (°C)	126 To 158 (52 To 70)
1 st Cycle Trip Current	A	56
1 st Cycle Trip On Time	second	2 To 10
Terminal Fused Cluster	---	¼" Quick connector
Wire Material	---	Hermetic Grade Round Enameled
Wire Enamel Designation & Construction	---	H Class, Dual Coated

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PRODUCT SPECIFICATION**MODEL: CR36K6M-PFZ-XXXXX****P) PERFORMANCE SPECIFICATIONS**

Parameter	Unit	Value
Bare Compressor Sound	dB(A)	74 Maximum
Bare Compressor Vibration	µm	142.0 Maximum
Compressor Discharge Pulse	psi	6.0 Maximum

Q) TEST CONDITIONS

Parameter	Voltage	Suction Pressure	Discharge Pressure	Top Shell Temperature	Ambient Temperature
Unit	V	kg/cm ² (psig)	kg/cm ² (psig)	°C (°F)	°C (°F)
Overload (High Load)	220	6.50 (92.43)	30 (426.6)	--	55 (131)
Blocked Fan	220	6.33 (90)	28.12 (400)	--	--
Low Voltage Start: Equalised (PSC) Unequalised (CSCR)	198	11.9 ± 0.5 (169)	11.9 ± 0.5 (169)	62 (143.6)	--
Low Voltage Run	198	6.50 (92.43)	30 (426.6)	--	55 (131)

Note: Above test conditions are only for reference. Refer operating envelop and maximum allowable discharge line temperature for safe operation of compressor.

R) REFERENCE APPLICATION DETAIL CONDITIONS

Parameter	Unit	Value
Maximum Allowable Ambient Temperature	°C (°F)	55 (131)
Maximum Discharge Line Temperature	°C (°F)	129.4 (265)
Maximum Return Gas Temperature	°C (°F)	27 (80.6)

Note: Application details are the guidelines for safe operation of compressor.

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